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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/353,887	07/15/1999	STEPHEN W. EDWARDS	49658.21698	4245

49358 7590 07/12/2006

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EXAMINER	
BRIER, JEFFERY A	
ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/353,887
Filing Date: July 15, 1999
Appellant(s): EDWARDS, STEPHEN W.

MAILED

JUL 12 2006

Technology Center 2600

Li K. Wang
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 05/20/2004 appealing from the Office action mailed 1/12/2004 and to the REMAND mailed on 3/08/2006.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 1, 4-8, 21-22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) in view of Young et al (U.S. Pat. No. 5,831,637) and Tanaka et al (U.S. Pat. No. 5,793,371), and further in view of Saunders et al (U.S. Pat. No. 6,046,747), Claims 9-13, 15-19 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) in view of Tanaka et al (U.S. Pat. No. 5,793,371), and further in view of Saunders et al (U.S. Pat. No. 6,046,747), Claims 14, 20, 26-28 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) and Tanaka et al (U.S. Pat. No. 5,793,371) in view of Saunders et al (U.S. Pat. No. 6,046,747), and further in view of Chimoto (U.S. Pat. No. 5,550,961), and Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705), Tanaka et al (U.S. Pat. No. 5,793,371) and Saunders et al (U.S. Pat. No. 6,046,747) in view of

Chimoto (U.S. Pat. No. 5,550,961), and further in view of Young et al (U.S. Pat. No. 5,831,637).

.This appeal involves claims 1, 4-22 and 24-38.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of invention contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct.

Claims 1, 4-8, 21-22 and 24-25 are rejected under 35 U.S.C. 103(a) based upon combination of four references substantially as set forth in the Final Rejection.

NEW GROUND(S) OF REJECTION

The changes are as follows:

Claims 29-31 are rejected under 35 U.S.C. 103(a) based upon combination of five references rather than four references with the fifth reference being in addition to the four used in the Final Rejection.

Claims 14, 20, 26-28 and 32-34 are rejected under 35 U.S.C. 103(a) based upon combination of four references of the five used in the Final Rejection.

Claims 9-13, 15-19 and 35-38 are rejected under 35 U.S.C. 103(a) based upon combination of three references of the four used in the Final Rejection.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,886,705	Lentz	3-1999
5,831,637	Young et al	11-1998
5,793,376	Tanaka et al	8-1998
6,046,747	Saunders et al	4-2000
5,550,961	Chimoto	8-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 4-22 and 24-38 are rejected under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-8, 21-22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) in view of Young et al (U.S. Pat. No. 5,831,637) and Tanaka et al (U.S. Pat. No. 5,793,371), and further in view of Saunders et al (U.S. Pat. No. 6,046,747).

Regarding claim 1, Lentz discloses that the claimed feature of a graphics accelerator for processing a graphical image, the graphics accelerator comprising: a single texture buffer (21) for storing texture maps (i.e. "texel") and data relating to the texture maps stored in the texture buffer (21) (See Abstract line 1-2, col 2 line 18-20, col 3 line 24-30, col 8 line 15-31); a plurality of texture processors (13 & 24) that perform texturing operations on the graphical image, the plurality of the texture processors retrieving texture packets from the single texture buffer (See Abstract, Fig 1, Fig 2, col 1 line 5-13); each texture processor (13 & 24) including a fetching engine ["pixel-value calculation";15] (See col 2 line 1-2) that retrieves texture packets, each texture packet being stored in the texture buffer (21) and being associated with a texture map that is different than the texture maps associated with any other texture packet in the texture buffer, each texture packet including data ["texture-memory addresses", which identified by texture address; 24) relating to the location of its associated texture map ["texel"] in the texture buffer (21) and data relating to the dimensional type of that texture packet's associated texture map. (See Fig 1, Fig 7, col 1 line 66-col 2 line 4, col 2 line 43-60, col

3 line 10-14, col 3 line 22-36, col 4 line 14-17, col 4 line 42-54, col 5 line 7-11, col 5 line 22-23, col 8 line 46+)

Lentz does not specifically disclose "the texture buffer", as claimed by Applicant. However, a texture buffer is an obvious embodiment of the notoriously well-known texture memory. According to the computer dictionary ["Microsoft Press Computer Dictionary", Third Edition], buffer is defined as "*a region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations, as between an application's data area and an input/output device*". From its definition of "buffer", it is reasonable to interpret "texture memory" of Lentz into "texture buffer" in recited claim, as both are functionally equivalent. [i.e. storing texture data]

Also, Lentz does not explicitly discloses that performing texture operations by multiple texture processors, wherein the plurality of processors retrieve texture packets from the single texture buffer. However, such limitations are shown in the teaching of Young et al. [i.e. 'employing multiple texture processors (251-254) and doing texture mapping with multiple texture processor (251-254), which connected with texture memory (251a-254a)] (See Fig 1, Fig 2 of Young et al) The motivation would have been to minimize the time required for texture processing. Further, as to the computer dictionary ["Microsoft Press Computer Dictionary", Third Edition], "Multiprocessing/Multiprocessor" is defined as "*mode of operation in which two or more connected and roughly equal processing units each carry out one or more processes. In multiprocessing, each processing unit works on a different set of instructions or on different*

parts of the same process. The objective is increased speed or computing power, the same as in parallel processing and in the use of special units called coprocessors". Therefore, it would have been obvious to one skilled in the art to employ plurality of texture processors [i.e. multiple circuitry of 13 in Fin 1 or Lentz] into the teaching of Lentz, thereby reducing texture-processing time effectively. (See suggestions in col 7 line 25-34 of Lentz)

Further, The combination of Lentz and Young et al do not explicitly disclose that a texture packets identifying the location of a texture map. However, Tanaka et al clearly discloses that the packet data, which represents the storage location of a texture data/map. (See col 2 line 55-62, col 8 line 26-34) It would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz and Young et al, in order to retrieve proper texels from texture memory with maximized texel data retrieval speed (Also See col 18 line 6-11 in Tanaka et al), as such improvement is also advantageously desirable in the teaching of Lentz and Young et al for accessing the texture data properly and rapidly with optimized memory organization. (See col 2 line 43-56 in Lentz)

Finally, The combination of Lentz, Young et al and Tanaka et al do not specifically disclose that texture packet has data relating to the dimensional type of its texture map. However, in an analogous art (texture mapping), Saunders et al discloses that "the special bind texture call includes a target parameter that defines the dimension of the texture map and an ID number that identifies the display list texture object." (See

col 6 line 56-67) It would have been obvious to one skilled in the art to incorporate the teaching of Saunders et al into the teaching of Lentz, Young et al and Tanaka et al, in order to provide efficient way to perform texture mapping process based on dimension type of texture data, as multi-dimensional texture map are used in current computer graphic systems, (also see the suggestions in col 1 line 51 of Lentz "not necessarily two dimensional") it is necessarily required for indicating dimensional type in texture data, because the ordinary skilled in the art would know that different mathematical equations are required for different dimensional type of texture maps, and the three-dimensional texture mapping process will require large capacity processor and much more time to process comparing to one-dimensional texture mapping process, since 3-D texture mapping have more variable to calculate. Therefore, having the texture data, which indicates its dimensional type, is also advantageously desirable in the combination of Lentz, Young et al and Tanaka et al for operating texture mapping process rapidly with no complicated manner.

Regarding claim 4, Lentz discloses that the dimensional type of each texture map is one of a one-dimensional texture map, a two-dimensional texture map, and a three-dimensional texture map. (See Fig 7)

Regarding claim 5, Lentz discloses that an input for receiving a texture message indicating that a texture map is to be utilized by the texture processor, the fetching

engine responsively retrieving selected texture packets from the single texture buffer in response to receipt of the texture message. (See Fig 1)

Regarding claim 6, Lentz discloses that the texture processor [output-image generator; 13] includes a parsing engine [12] for parsing a fetched texture packet and determining information relating to the texture map associated with the fetched texture packet. (See Fig 1; Also See col 2 line 55-62, col 8 line 26-34 in Tanaka et al)

Regarding claim 7, Lentz discloses that the information relates to the location in the texture buffer [21] of the texture map associated with the fetched texture packet. (See Fig 1; Also See col 2 line 55-62, col 8 line 26-34 in Tanaka et al)

Regarding claim 8, Lentz discloses that the information relates to the number of dimensions of the texture map associated with the fetched texture packet. (See Fig 1; Also See col 2 line 57-60 in Saunders et al)

Regarding claim 21, claim 21 is similar in scope to the claim 1, and thus the rejections to claim 1 hereinabove is also applicable to claim 21.

Regarding claim 22, Lentz discloses that texture packet includes data relating to the location of its associated texture map in the single texture buffer. (See Fig 7)

Regarding claims 24-25, claims 24-25 are similar in scope to the claims 5-6, and thus the rejections to claims 5-6 hereinabove are also applicable to claims 24-25.

NEW GROUND(S) OF REJECTION

Claims 9-13, 15-19 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) in view of Tanaka et al (U.S. Pat. No. 5,793,371), and further in view of Saunders et al (U.S. Pat. No. 6,046,747).

Regarding claim 9, Lentz discloses that the claimed feature of a method of applying texture to a graphical image employing a graphics accelerator with a plurality of texture processors, the method comprising: locating a texture packet ["texel" or "texture address data"] identifying the location of a texture map in a single memory device [21], wherein the texture packet is associated with the texture map that is different than texture maps associated with other texture packets; parsing [12,13] the texture packet to determine the location and the number of dimensions of the texture map; retrieving, based upon the determined location, the texture map from the single memory device [21]; applying the texture map to the graphical image. (See Fig 1, Fig 2, Fig 7, col 1 line 66-col 2 line 4, col 2 line 43-60, col 3 line 10-14, col 3 line 22-36, col 4 line 14-17, col 4 line 42-54, col 5 line 7-11, col 5 line 22-23, col 8 line 46+)

Lentz does not explicitly disclose that a texture packets identifying the location of a texture map. However, Tanaka et al clearly discloses that the packet data, which represents the storage location of a texture data/map. (See col 2 line 55-62, col 8 line 26-34) It would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz, in order to retrieve proper texels from texture memory with maximized texel data retrieval speed (Also See col 18 line 6-11 in Tanaka et al), as such improvement is also advantageously desirable in the teaching of Lentz and Young et al for accessing the texture data properly and rapidly with optimized memory organization. (See col 2 line 43-56 in Lentz)

Finally, The combination of Lentz, Young et al and Tanaka et al do not specifically disclose that texture packet has data relating to the dimensional type of its texture map. However, in an analogous art (texture mapping), Saunders et al discloses that "the special bind texture call includes a target parameter that <u>defines the dimension of the texture map</u> and an ID number that identifies the display list texture object." (See col 6 line 56-67) It would have been obvious to one skilled in the art to incorporate the teaching of Saunders et al into the teaching of Lentz, Young et al and Tanaka et al, in order to provide efficient way to perform texture mapping process based on dimension type of texture data, as multi-dimensional texture map are used in current computer graphic systems, (also see the suggestions in col 1 line 51 of Lentz "<u>not necessarily two dimensional</u>") it is necessarily required for indicating dimensional type in texture data, because the ordinary skilled in the art would know that different mathematical equations

are required for different dimensional type of texture maps, and the three-dimensional texture mapping process will require large capacity processor and much more time to process comparing to one-dimensional texture mapping process, since 3-D texture mapping have more variable to calculate. Therefore, having the texture data, which indicates its dimensional type, is also advantageously desirable in the combination of Lentz, Young et al and Tanaka et al for operating texture mapping process rapidly with no complicated manner.

Regarding claim 10, Lentz discloses that the texture packet is located by accessing a record identifying the location of the texture packet. (See Abstract, Fig 1, Fig 7, col 2 line 48-60, col 4 line 14-17, col 4 line 42-54, col 5 line 7-11, col 8 line 15-31)

Regarding claim 11, Lentz discloses that the single memory device is texture memory. (See Fig 1)

Regarding claim 12, Lentz discloses that the texture packet is stored in the single memory device. (See Fig 1)

Regarding claim 13, Lentz discloses that reconstructing the texture map after it is retrieved from the single memory device. (See Fig 1, Fig 7)

Regarding claims 15-19, claims 15-19 are similar in scope to the claims 9-13, and thus the rejections to claims 9-13 hereinabove are also applicable to claims 15-19.

Regarding claim 35, Lentz discloses that the claimed feature of a data structure for storing data relating to a texture map ["texel"], the texture map having an associated dimension and being stored at a given location ["address"] in a single memory device, the apparatus comprising: a location field [i.e. "address"] identifying the given location in the memory device; a dimension field identifying the dimension of the texture map (See Fig 1, Fig 7)

Lentz does not explicitly disclose that a texture packets identifying the location of a texture map. However, Tanaka et al clearly discloses that the packet data, which represents the storage location of a texture data/map. (See col 2 line 55-62, col 8 line 26-34) It would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz (Also See col 18 line 6-11 in Tanaka et al), in order to retrieve proper texels from texture memory with maximized texel data retrieval speed, as such improvement is also advantageously desirable in the teaching of Lentz and Young et al for accessing the texture data properly and rapidly with optimized memory organization. (See col 2 line 43-56 in Lentz)

Also, The combination of Lentz, Young et al and Tanaka et al do not specifically disclose that texture packet has data relating to the dimensional type of its texture map.

However, in an analogous art (texture mapping), Saunders et al discloses that "the special bind texture call includes a target parameter that defines the dimension of the texture map and an ID number that identifies the display list texture object." (See col 6 line 56-67) It would have been obvious to one skilled in the art to incorporate the teaching of Saunders et al into the teaching of Lentz, Young et al and Tanaka et al, in order to provide efficient way to perform texture mapping process based on dimension type of texture data, as multi-dimensional texture map are used in current computer graphic systems, (also see the suggestions in col 1 line 51 of Lentz "not necessarily two dimensional") it is necessarily required for indicating dimensional type in texture data, because the ordinary skilled in the art would know that different mathematical equations are required for different dimensional type of texture maps, and the three-dimensional texture mapping process will require large capacity processor and much more time to process comparing to one-dimensional texture mapping process, since 3-D texture mapping have more variable to calculate. Therefore, having the texture data, which indicates its dimensional type, is also advantageously desirable in the combination of Lentz, Young et al and Tanaka et al for operating texture mapping process rapidly with no complicated manner.

Regarding claim 36, Lentz discloses that the texture map comprises a set of mipmaps, further wherein the location field includes a plurality of subfields, each subfield identifying the location of one mipmap in the set of mipmaps. (See Fig 1, Fig 2,

Fig 7, col 1 line 66-col 2 line 4, col 2 line 43-60, col 3 line 10-14, col 3 line 22-36, col 4 line 14-17, col 4 line 42-54, col 5 line 7-11, col 5 line 22-23, col 8 line 46+)

Regarding claim 37, Lentz discloses that the texture map spans a plurality of addresses in the memory device, the location field identifying the plurality of addresses. (See Fig 1, Fig 7)

Regarding claim 38, Lentz discloses that the data structure is stored in the memory device, the memory device being texture memory. (See Fig 1)

Claims 14, 20, 26-28 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705) and Tanaka et al (U.S. Pat. No. 5,793,371) in view of Saunders et al (U.S. Pat. No. 6,046,747), and further in view of Chimoto (U.S. Pat. No. 5,550,961).

Regarding claim 14, the combination of Lentz, Tanaka et al and Saunders et al fails to explicitly disclose that the texture map being reconstructed based upon the determined dimensional type of the texture map. However, Chimoto discloses that reconstructing the two-dimensional texture data as one-dimensional texture data. (See Fig 3, col 2 line 50-55, col 5 line 12-39, col 6 line 67-col 7 line 39, col 7 line 55+) It would have been obvious to one skilled in the art to incorporate the teaching of Chimoto

into the teaching of Lentz, Tanaka et al and Saunders et al, in order to operate high-speed texturing without extensive using of texture memory (See col 2 line 16-21, col 5 line 16-25 in Chimoto), as such improvement is also advantageously desirable in the teaching of Lentz for operating texture mapping process rapidly with simple modification of memory organization.

Regarding claim 20, claim 20 is similar in scope to the claim 14, and thus the rejection to claim 14 hereinabove is also applicable to claim 20.

Regarding claim 26, as similar to claim 1 hereinabove, Lentz discloses that the claimed feature of a method of storing a texture map in linear texture memory of a graphics accelerator, the method comprising: a) determining the dimension of the texture map ["texel"]; b) converting the texture map to a one dimensional texture map if the dimension of the texture map is determined to be more than one dimensional, the one dimensional texture map having a first number of consecutive data blocks; c) locating a second number of consecutive memory locations in the texture memory, the first number being equal to the second number; d) storing the one dimensional texture map in the located memory locations in the texture memory. (See Fig 1, Fig 7, col 1 line 66-col 2 line 4, col 2 line 43-60, col 3 line 10-14, col 3 line 22-36, col 4 line 14-17, col 4 line 42-54, col 5 line 7-11, col 5 line 22-23, col 8 line 46+)

Lentz does not explicitly disclose that a texture packets identifying the location of a texture map. However, Tanaka et al clearly discloses that the packet data, which represents the storage location of a texture data/map. (See col 2 line 55-62, col 8 line 26-34) It would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz, in order to retrieve proper texels from texture memory with maximized texel data retrieval speed (Also See col 18 line 6-11 in Tanaka et al), as such improvement is also advantageously desirable in the teaching of Lentz and Young et al for accessing the texture data properly and rapidly with optimized memory organization. (See col 2 line 43-56 in Lentz)

Also, The combination of Lentz, Young et al and Tanaka et al do not specifically disclose that texture packet has data relating to the dimensional type of its texture map. However, in an analogous art (texture mapping), Saunders et al discloses that "the special bind texture call includes a target parameter that <u>defines the dimension of the texture map</u> and an ID number that identifies the display list texture object." (See col 6 line 56-67) It would have been obvious to one skilled in the art to incorporate the teaching of Saunders et al into the teaching of Lentz, Young et al and Tanaka et al, in order to provide efficient way to perform texture mapping process based on dimension type of texture data, as multi-dimensional texture map are used in current computer graphic systems, (also see the suggestions in col 1 line 51 of Lentz "<u>not necessarily two dimensional</u>") it is necessarily required for indicating dimensional type in texture data, because the ordinary skilled in the art would know that different mathematical equations

are required for different dimensional type of texture maps, and the three-dimensional texture mapping process will require large capacity processor and much more time to process comparing to one-dimensional texture mapping process, since 3-D texture mapping have more variable to calculate. Therefore, having the texture data, which indicates its dimensional type, is also advantageously desirable in the combination of Lentz, Young et al and Tanaka et al for operating texture mapping process rapidly with no complicated manner.

Further, the combination of Lentz, Tanaka et al and Saunders et al do not explicitly disclose that the texture map being reconstructed based upon the determined dimensional type of the texture map. However, Chimoto discloses that reconstructing the two-dimensional texture data as one-dimensional texture data. (See Fig 3, col 2 line 50-55, col 5 line 12-39, col 6 line 67-col 7 line 39, col 7 line 55+) It would have been obvious to one skilled in the art to incorporate the teaching of Chimoto into the teaching of Lentz, Tanaka et al and Saunders et al, in order to operate high-speed texturing without extensive using of texture memory (See col 2 line 16-21, col 5 line 16-25 in Chimoto), as such improvement is also advantageously desirable in the combination of Lentz, Tanaka et al and Saunders et al for operating texture mapping process rapidly with simple modification of memory organization.

Regarding claim 27, refer to the discussion for the claim 26 hereinabove, Chimoto further discloses that step b) comprising: B1) defining a plurality of data blocks within the texture map (See Fig 3, col 2 line 50-55, col 5 line 12-39, col 6 line 67-col 7 line 39, col 7 line 55+) B2) assigning a sequence number to each of the data blocks, the sequence numbers being consecutive numbers. (See Fig 3, col 2 line 50-55, col 5 line 12-39, col 6 line 67-col 7 line 39, col 7 line 55+)

Regarding claim 28, refer to the discussion for the claim 26 hereinabove, Chimoto discloses that step d) comprising: D1) consecutively storing each consecutive data block of the one dimensional texture map in the located memory locations. (See Fig 3, col 2 line 50-55, col 5 line 12-39, col 6 line 67-col 7 line 39, col 7 line 55+)

Regarding claims 32-34, claims 32-34 are similar in scope to the claims 26-28, and thus the rejections to claims 26-28 hereinabove are also applicable to claims 32-34.

Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz (U.S. Pat. No. 5,886,705), Tanaka et al (U.S. Pat. No. 5,793,371) and Saunders et al (U.S. Pat. No. 6,046,747) in view of Chimoto (U.S. Pat. No. 5,550,961), and further in view of Young et al (U.S. Pat. No. 5,831,637).

Regarding claim 29, claim 29 is similar in scope to the claim 26, and thus the rejection to claim 26 hereinabove is also applicable to claim 29. In addition, Lentz does

not specifically discloses a plurality of texture processors. However, such limitations are shown in the teaching of Young et al. [i.e. 'employing multiple texture processors (251-254) and doing texture mapping with multiple texture processor (251-254), which connected with texture memory (251a-254a)] (See Fig 1, Fig 2 of Young et al) The motivation would have been to minimize the time required for texture processing. Further, as to the computer dictionary ["Microsoft Press Computer Dictionary", Third Edition], "Multiprocessing/Multiprocessor" is defined as "*mode of operation in which two or more connected and roughly equal processing units each carry out one or more processes. In multiprocessing, each processing unit works on a different set of instructions or on different parts of the same process. The objective is increased speed or computing power, the same as in parallel processing and in the use of special units called coprocessors*". Therefore, it would have been obvious to one skilled in the art to employ plurality of texture processors [i.e. multiple circuitry of 13 in Fin 1 or Lentz] into the combination of Lentz, Tanaka et al, Saunders et al and Chimoto, thereby reducing texture-processing time effectively. (See suggestions in col 7 line 25-34 of Lentz)

Regarding claims 30-31, claims 30-31 are similar in scope to the claims 27-28, and thus the rejections to claims 27-28 hereinabove are also applicable to claims 30-31.

(10) Response to Argument

On page 3 of the Brief appellant argued that "References used for rejection under 35 U.S.C. 103(a) must provide some suggestion for combination." Specifically, on page 3-5, appellant argued that the Examiner did not give any reason or motivation for combing the cited references (Lentz, Young et al, Tanaka et al, Saunders et al and Chimoto), which used in previous rejection for claims 1,9 and 26. As stated in the final rejection, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is clearly shown in all five cited references that they all relate to 'a texture processing' [i.e. texture mapping] in an analogous art, and all cited references could properly combining to produce the claimed invention, as motivation are provided therewithin for accessing the texture data from texture memory/buffer properly and rapidly during the texture processing by optimizing or simplifying memory organization. Specifically, the implementing of "multiple texture processors" of Young et al would minimize the time required for texture processing because multiple texture processor can provide the increased speed or improved computing power by each processing unit works on a different set of instructions or on different parts of the same process, as compared to a single texture processor. Therefore, it would have been obvious to one skilled in the art

to employ plurality of texture processors [i.e. multiple circuitry of 13 in Fin 1 or Lentz] into the teaching of Lentz, thereby reducing texture-processing time effectively. Also, the implementing of "packet data that represents the storage location of a texture data" of Tanaka et al would improve the accessibility of proper texels from texture memory with maximized texel data retrieval speed. (Also See col 18 line 6-11 in Tanaka et al) Therefore, it would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz and Young et al for accessing the texture data properly and rapidly with optimized memory organization. Further, the implementing of "parameter that defines the dimension of the texture map" of Saunders et al would provide the texture processing rapidly with no complicated manner by applying proper mathematical algorithm for each type of dimensional data. Therefore, having the texture data, which indicates its dimensional type, is also advantageously desirable in the combination of Lentz, Young et al and Tanaka et al for performing the optimized texture mapping process at faster processing time. Finally, the implementing of "reconstructing the two-dimensional texture data as one-dimensional texture data" of Chimoto would provide operation of high-speed texture without extensive using of texture memory, as suggested in col 2 line 16-21, col 5 line 16-25 of Chimoto, therefore, it would have been obvious to one skilled in the art to incorporate the teaching of Chimoto into the teaching of Lentz, Young et al, Tanaka et al and Saunders et al for operating texture mapping process rapidly with simple modification of memory organization.

On page 5 of the Brief appellant argued that "The passages cited by the Examiner Do Not support the Examiner's Conclusions" Specifically, on page 5-6, appellant argued that the cited reference (Kobayashi et al) teaches away from the invention by recommending against using a single texture buffer. However, the Kobayashi reference is no longer part of the rejection herewithin, therefore appellant's argument is moot in view of the ground of rejection hereinabove to the appealed claims. The single texture buffer is shown in the teaching of Lentz. (See "texture memory"; 21 in Fig1) Also, on page 6, appellant argued that "there is not intended suggestion in Lentz to motivate combination with Tanaka et al. However, the objective of both teaching is to perform higher-speed operation within the texture processing. (See col 2 line 43-56 in Lentz, See col 18 line 6-11 in Tanaka et al) From this, It would have been obvious to one skilled in the art to incorporate the teaching of Tanaka et al into the teaching of Lentz, in order to retrieve proper texels from texture memory with maximized texel data retrieval speed, as such improvement is also advantageously desirable in the teaching of Lentz for accessing the texture data properly and rapidly with optimized memory organization.

In response to applicant's argument, on page 6 of the Brief appellant, that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's

disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). As mentioned in hereinabove, the cited references all relate to 'a texture processing' [i.e. texture mapping] in an analogous art, and all cited references could properly combining to produce the claimed invention, as motivation are provided therewithin for accessing the texture data from texture memory/buffer properly and rapidly during the texture processing by optimizing or simplifying memory organization.

For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

Jeffery A. Brier

Jeffery A Brier
Primary Examiner
Division 2628

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

Conferees:

SPE Michael Razavi MR

SPE Richard Hjerpe

TC DESIGNEE
Reinhard Eisenzopf
REINHARD EISENZOPF
QAS